mental subjects are practical; and the number of students who took practical work is as follows: Inorganic Chemistry, 15,169; Magnetism and Electricity, 2694; Sound, Light, and Heat, 1793; Organic Chemistry, 1538. The remaining practical subjects—human physiology, general biology, zoology, botany, and metallurgy—divided 1852 students between them. There are now 169 Schools of Science in which organised courses of study are taken in connection with the Department, and the number of students attending them is 20,879.

SCIENTIFIC SERIALS.

THE most important contribution to *Himmel und Erde* for this month is a long paper on the terminal moraines of North Germany. The other papers comprise one in which is given the conclusion of a lecture by Dr. Drygalski on Greenland, dealing mainly, in this part, with the habits and customs of the Esquimaux; and another by Herr G. von Gleicke treating of the existence of an intra-mercurial planet or planets, generally surveying the various theories that have been put forward to explain the motion of the perihelion of Mercury. The only result that appears certain in the paper is the practical confirmation of the reality of the motion, originally determined by Le Verrier. The presence of a single planet or of a ring of meteoric matter; the existence of an unknown satellite of the planet itself, or an ellipticity in the figure of the sun; an alteration in the expression of the law of gravitation or the introduction of terms suggested by electrodynamic considerations; all seem to offer insuperable objections, or to be based on pure empiricism. The enigma is not solved yet. The subjects to which the shorter notes refer have generally been mentioned in these columns. They include some account of the Greenland Meteor; the sinking of the surface of the earth in the neighbourhood of the Canadian lakes, and its effect on the Niagara Falls; the depth of the sea and the determination of ocean currents around Australia derived from floating bottles. A short notice is also added of a proposed attempt on the part of MM. Godard and Surcouf to reach the North Pole by means of ballooning. The expedition would start in the summer of 1898, selecting Spitsbergen as a base of operations. The peculiar feature of the attempt seems to consist in carrying twelve small balloons, filled with hydrogen to serve as a gasometer to supply the main balloon, which is of gigantic dimensions, with the gas which may leak or waste. M. Godard counts on spending sixty days aloft, and to carry with him the means of support of no less than seven people, among whom will be found a chemist, a meteorologist, and a physician.

Memoirs of the Caucasian Branch of the Russian Geographical Society, vol. xviii.—On the distribution of precipitation in Caucasia during the spring and summer of 1894, by A. Woznesensky, with four maps.—Journey in the Chernomorsk district, in 1894, by N. Alboff; with a map (on the scale of seven miles to an inch) of the Chernomorsk district and the western part of the district of Sukhum; and botanico-geographical researches in Western Transcaucasia, by the same author, being a continuation of his paper inserted in a preceding volume of his *Memoirs*. In this paper two important excursions across the main ridge of Abhasia are described. The flora of the limestone-mountains having been the special subject of studies, it is dealt with in detail. The rare new species *Amphoricarpus elegans*, which was formerly found at two places only of Abhasia and Mingrelia, was met with in thousands. A bushlike *Campanula*, which M. Alboff considers as a new species, was found and was named *C. regina* for its rare beauty. Numbers of other rare species were found. Detailed lists of the limestones' fauna in Abhasia and Mingrelia are given. In addition to the glaciers previously discovered on the northern slope, a hanging glacier was found on the southern slope. Very interesting remains of the ancient population of the region are mentioned.—On the Kumyks, anthropological sketch by J. Pantukhoff. The paper contains a sketch dealing with the possible origin of this Tartar stem, anthropological measurements made by the author, and a comparison of the same with measurements on other Caucasian stems.—The Pshaves and their land, by D. Khizanachwili.—A journey in the central portion of the Mountain-Chechnya, by Madame A. Rossikoff, with a map three and a half miles to the inch. Detailed and lively account of a journey in that imperfectly known part of Daghestan, the seat of Shamil's wars.—Statistical description of, and statistical data relative to, the provinces of Baku, Kars, Erivan, Daghestan, and Elisabethpol.—On the condition of glaciers and of the lakes on the northern slope of Central Caucasus, by K. Rossikoff.—In a very interesting appendix we find (1) a beautiful atlas of eight ethnographical maps of Transcaucasia, one for each separate province, on the scale of thirteen miles to an inch (it is the work of E. Kondratenko); (2) a map of the distribution of the Armenian population in Asia Minor, on the basis of V. Cuinet's data, 1890-94, accompanied by a paper by General Zelenyi and Colonel Sysoeff; and (3) the distribution of Armenian populations in Transcaucasia.

WE have received the number of the *Irish Naturalist* for February, and are always glad to say a word on behalf of these local natural history journals, which have done so much to encourage the early enthusiasm of many who have afterwards become eminent naturalists. In the present number Mr. Allan P. Swan describes and figures a new species of *Leptolegnia, L. bandoniensis*, belonging to the *Saprolegniaceæ*.

THE *Journal of Botany*, in its numbers for January and February, still continues to cater chiefly for descriptive and "critical" botanists. Mr. F. Townsend describes and figures a new species of *Euphrasia, E. canadensis*, from the neighbourhood of Quebec; and Miss Ella M. Tindall enriches British Hepaticæ with a species new to science, *Fossombronia Mittenii*, from North Devon, which is also figured

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, January 20.—"Fergusonite, an Endothermic Mineral." By William Ramsay, Ph.D., LL.D., Sc.D., F.R.S., and Morris W. Travers, B.Sc.

The mineral fergusonite, discovered by Hartwall, occurs in felspar and mica deposits, in the same manner as most of the rare Norwegian minerals, such as euxenite, orthite, samarskite, &c. The position in which such minerals are found, embedded in masses of felspar, or encrusted with mica, leaves the question of their origin an open one. Whether they are deposited in the felspar by water, or whether they are contemporaneous with the felspar, is a matter of speculation. Fergusonite is a black lustrous mineral, not unlike obsidian in outward appearance, but of considerably higher density. Seen under the microscope, even with the highest power, there is absolutely no sign of crystalline structure, though in thin slices the substance is translucent, and transmits yellow-brown light. It is, however, macrocrystalline, occurring in quadratic sphenoids. It is quite homogeneous, and displays no sign of cavities. Like similar minerals, it contains helium, which is expelled on the application of heat.

But this mineral presents a peculiarity, which has led us to publish this note. When heated to a temperature not exceeding 500° or 600°, it suddenly becomes incandescent, and evolves much of its helium; while its density decreases.

The analysis of the mineral was kindly undertaken by Miss Emily Aston, to whom we desire to express our indebtedness.

It showed that fergusonite is mainly a niobate of yttrium, containing oxides of uranium, but in no great quantity.

The gases evolved by the incandescence of nearly 5 grams (4·852) of the mineral, heated in a vacuous tube, were analysed and found to consist of helium, hydrogen, carbon dioxide, and nitrogen.

The density was determined before and after heating. Great care was taken to make sure of the absence of air-bells, by warming the powdered mineral under water in a vacuum, before weighing it.

Density before heating	5·619
,, after ,, ...	5·375

It is thus seen that the mineral loses density on incandescence.

The amount of heat lost by this curious mineral in parting with its helium was determined. The plan of operation was to burn in oxygen a known weight of hydrogen, ascertained by measuring it, under a small platinum crucible, in a calorimeter. The rise of temperature was noted. This operation was repeated several times, so as to standardise the calorimeter. Some grams of mineral were then placed in the crucible, and the operation was repeated; the heat evolved by the incandescing mineral added itself to that from the burning hydrogen, and the rise of temperature was greater. Knowing the heat of combustion of hydrogen, a simple calculation gave the heat evolved by the exothermic change in the mineral.

Various questions are raised by the behaviour of this interesting mineral. Its evolution of heat, accompanying its parting with helium, suggest the idea that it is a true endothermic compound of helium. Had its density, as is the case with alumina, and with other oxides which rise spontaneously in temperature when heated, increased instead of decreased, the evolution of heat might justly have been ascribed to polymerisation. But an evolution of heat, accompanied by a *fall* in density, leads to the conjecture that the loss of energy is the result of the loss of helium; and that, conversely, the formation of the compound must have been concurrent with a gain of energy. That the helium is actually in combination, and not retained in pores in the mineral, is evinced by there being no pores in which the helium might be imprisoned. Surface-absorption is equally out of the question, for the mineral is compact. The only remaining possibility is that the helium is in chemical combination. And if this is true, then the compound must be an endothermic one.

There is one other substance at least which decreases in density, while it evolves heat; that substance is water, in changing into ice. The effect of compressing ice is to lower its melting point, and at the same time to reduce its heat of fusion. At a sufficiently high pressure there would be a continuous transition from ice to water, no heat change taking place during the transition. Matters would be in a similar condition to those which accompany the change of a liquid into gas at the critical temperature; the smallest alteration of temperature would be enough to bring about the change. In speculating on the origin of such a remarkable compound, is it not allowable to guess that it represents a condition of our earth realised only before solidification had set in? That these minerals, containing the rare elements, represent a portion of the interior of our planet; and that under the enormous pressure obtaining at the centre, combination with helium was an exothermic event; and that such compounds, having by some unexplained accident come to the surface of the globe, where they are no longer exposed to such pressure, they have, in consequence of the change, become endothermic? The frequency of the helium spectrum in the stars, and its presence in the sun, makes it less improbable that some such explanation may lie not far from the truth.

February 3.—"Note on the Experimental Junction of the Vagus Nerve with the Cells of the Superior Cervical Ganglion." By Dr. J. N. Langley, F.R.S., Fellow of Trinity College, Cambridge.

The author concludes from his experiments that there is no essential difference between the efferent "visceral" or "involuntary" nerve fibres, whether they leave the central nervous system by way of the cranial nerves, by way of the sacral nerves, or by way of the spinal nerves to the sympathetic system. All of these fibres he takes to be pre-ganglionic fibres. And he thinks that any pre-ganglionic fibre is capable, in proper conditions, of becoming connected with any nerve-cell with which a pre-ganglionic fibre is normally connected; although apparently this connection does not take place with equal readiness in all cases. On the whole it appears that the functions exercised, both by pre-ganglionic and by post-ganglionic fibres, depend less upon physiological differences than upon the connections which they have an opportunity of making during the development of the nervous system and of the other tissues of the body.

Physical Society, Annual General Meeting, February 11, 1898.—Mr. Shelford Bidwell, President, in the chair. The Report of the Council was read by Mr. Elder. Dr. Atkinson then presented the Treasurer's Report, and informed the Society of the improved condition of its finances. The difficulties of the previous year had arisen from the expenses incurred by the publication of abstracts of current scientific literature; those difficulties had been surmounted without drawing upon the reserve fund. Very few Fellows had objected to the increase of subscription. In acknowledgment and appreciation of the abstracts, now presented to all Fellows, many of the original life-members had lately made additional voluntary donations to the funds of the Society, thus sharing with new Fellows the extra outlay involved by the abstracts. It was to be hoped that all life-members would adopt this course, more especially as the scope of scientific literature covered by the abstracts was now being extended to British as well as to foreign sources. Votes of thanks were passed to the Council, the officers, and to the Council of the Chemical Society for the use of their rooms at Burlington House. Two Honorary Fellows were unanimously elected by ballot, *i.e.* Riccardo Felici, professor in the University of Pisa; and Emilio Villari, professor in the University of Naples. Council and officers for the forthcoming year were elected as follows. President: Mr. Shelford Bidwell. Vice-Presidents (who have filled the office of President): Dr. J. H. Gladstone, Prof. G. C. Foster, Prof. W. G. Adams, The Lord Kelvin, Prof. R. B. Clifton, Prof. A. W. Reinold, Prof. W. E. Ayrton, Prof. G. F. Fitzgerald, Prof. A. W. Rücker, Captain W. de W. Abney. Vice-Presidents: Prof. C. Vernon Boys, Major-General E. R. Festing, Mr. G. Griffith, Prof. J. Perry. Secretary: Mr. H. M. Elder, 50 City Road, E.C. Foreign Secretary: Prof. S. P. Thompson. Treasurer: Dr. E. Atkinson. Librarian: Mr. W. Watson. Other Members of Council: Prof. H. E. Armstrong, Mr. Walter Baily, Mr. L. Clark, Dr. A. H. Fison, Mr. R. T. Glazebrook, Prof. A. Gray, Prof. J. Viriamu Jones, Mr. S. Lupton, Prof. G. M. Minchin, Mr. J. Walker.—The President then read an address in which the aims and history of the Physical Society were outlined. (An abstract of this address is published in the present issue, p. 378.) Prof. Rücker said that among the new and useful departures lately made by the Physical Society the institution of a presidential address was particularly worthy of notice; it was very desirable, from time to time, to hear a summary of what had been achieved during the year; it was also desirable that the objects of the Society should be, from time to time, definitely stated; this departure had been fully justified by the address of Mr. Shelford Bidwell.—A paper by Mr. G. H. Bryan on electro-magnetic induction in plane, cylindrical and spherical current sheets, and its representation by moving trails of images, was read by Mr. Elder. The phenomena of induction in a cylindrical conducting sheet in a two-dimensional field, and of induction in a spherical sheet in any field due to the generation or motion of poles, magnets, or currents, in the presence of the sheet, can be represented by moving trails of images which are but slightly more complicated than the well-known trails of images in a plane sheet. The images, representing the potentials of the induced currents on the two sides, start from the source of disturbance and its inverse point, and move normally away from the surface of the sphere and cylinder, with velocity varying directly as the disturbance. At the surface of the sheet this velocity becomes equal to the corresponding velocity for a plane sheet. The images are in most cases similar in nature to the inducing source of disturbance, and their intensities are found, in every case, to vary as a power of the distance from the centre. The images due to the sudden generation of a magnetic pole in the presence of a spherical sheet are, however, analogous to the hydro-dynamical image of a source in a sphere. Dr. S. P. Thompson said the method and the results obtained would find useful application in the solution of many allied problems.—The President proposed a vote of thanks to the author; the meeting was then adjourned until Saturday, February 26, on which occasion the Physical Society will visit Eton College. [Fellows are informed that a train leaves Paddington for Windsor at 2.25 p.m. This arrives in time for the meeting, which is at 4 p.m.]

Zoological Society, February 1.—Dr. St. George Mivart, F.R.S., Vice-President, in the chair.—Mr. Oldfield Thomas exhibited the skull of a giraffe from the Niger region, which had been shot by the late Lieut. R. H. McCorquodale, and presented to the British Museum by his brother, Mr. W. Hume McCorquodale. No giraffes had previously been received from this region, and as the skull proved to differ from that of the typical species in its greater size, longer muzzle, and more divergent horns, it was considered to represent a special subspecies, for which the name of *Giraffa camelopardalis peralta* was suggested.—Mr. Sclater exhibited some photographs of giraffes in order to show the differences in markings between the two forms *Giraffa camelopardalis typica* and *G. c. capensis.* —A letter was read from Mr. J. Graham Kerr, containing notes on the habits of the Paraguayan Lepidosiren, as observed by Mr. R. J. Hunt. It was shown that during the dry season it retired into burrows like its African relative *Protopterus.*—Mr. G. A. Boulenger, F.R.S., gave an account of the fishes collected by Dr. J. Bach in the Rio Jurua, Brazil. Fifty-one species were enumerated, of which nine were described as new. —Mr. F. E. Beddard, F.R.S., read a paper on the anatomy of an Australian cuckoo, *Scythrops novæ-hollandiæ*, which he was disposed to regard as being more nearly allied to *Eudynamys* than to any other form of the Cuculidæ.—Dr. A. G. Butler read a paper on a collection of Lepidoptera made by Mr. F. V. Kirby, chiefly in Portuguese East Africa. Ninety-two species were enumerated, of which one (*Euralia kirbyi*) was described as new. The paper also contained the description of a new species of *Cyclopides*, viz. *Cyclopides carsoni*, from Fwambo, collected by Mr. A. Carson.—A communication from Dr. N. H. Alcock, on the vascular system of the *Chiroptera*, was read by Prof. Howes. The anatomy of the vascular system of *Pteropus medius* was described and shown in its general plan to resemble in many respects that occurring in the Rodentia, and observations of a comparative nature were added on the pleuræ, pericardium, and lungs. A summary of the literature upon the *Chiroptera* was also included in the paper.

Entomological Society, February 2.—Mr. G. H. Verrall, Vice-President, in the chair.—The Secretary read a letter from Mr. A. D. Michael asking if any entomologists, who might find insects attacked by mites (*Acari*) among their disused boxes, would be willing to send him such insects, with the mites still on them or accompanying them, or at least, the mites themselves, with the name of the insect given in all cases, for the purpose of his forthcoming monograph of the Tyroglyphidæ.—Mr. J. W. Tutt showed a fine series of forms of *Hemerophila abruptaria*, Thunb., captured and bred by Mr. W. S. Pearce at Holloway, varying from the normal colour, through mahogany-brown to dark fuscous, some of the specimens of the second brood showing a purplish hue. One gynandromorphous example was shown, with the wings and right antenna of the female type, the left antenna being strongly pectinated. He also exhibited two specimens of *Dianthœcia luteago*, bred by the Rev. F. Lowe, from larvæ obtained in Guernsey, and of a very distinct character, having a tendency to the ochreous coloration of the type-form, but being differently marked.—On behalf of Mr. Heyne, Mr. Jacoby exhibited a series of temperature-varieties of Lepidoptera.—Mr. G. H. Carpenter read a paper by himself and the Rev. W. F. Johnson on the larva of *Pelophila borealis*, describing its structure and life-history. On the larval characters the species, hitherto considered as of doubtful relationship, was regarded as being closely allied to *Elaphrus*.—Papers were communicated by Mr. F. D. Godman, F.R.S., and Mr. O. Salvin, F.R.S., on new species of American Rhopalocera, and by Mr. M. Jacoby, on some phytophagous Coleoptera (Eumolpidæ) from the Islands of Mauritius and Réunion.

Chemical Society, February 3.—Prof. Dewar, President, in the chair.—The following papers were read:—The volumetric estimation of sodium, by H. J. H. Fenton. Sodium dihydroxytartrate is very sparingly soluble in water at 0° and the solubility in presence of excess of a dihydroxytartrate is practically negligible; since dihydroxytartaric acid is readily oxidised by permanganate in sulphuric acid solution, the formation of the sodium salt affords a simple and accurate method of estimating the metal.—The atomic weight of boron, by F. P. Armitage. From determinations of the water of crystallisation in borax, $Na_2B_4O_7$, H_2O, the atomic weight of boron is calculated as 10·928.—Rate of escape of ammonia from aqueous solution, by E. P. Perman. After drawing a volume V of air through a dilute solution of ammonia at a uniform rate, the amount q of ammonia left in solution is $\log q = a - bV$, where a and b are constants; with variable temperature t, $\log b = \alpha + \beta t$, α and β being constants.—On the dissociation of potassium platinichloride in dilute solution; and the production of platinum monochloride, by E. Sonstadt. Potassium platinichloride, in a 0·1 per cent. aqueous solution, is scarcely changed on heating; in a 0·01 per cent. solution platinum monochloride is gradually precipitated on heating, in accordance with the equations (1) $K_2PtCl_6 = 2KCl + PtCl_4$; and (2) $2PtCl_4 + 6H_2O = 2PtCl + 6HCl + 3H_2O_2$.—Effect of the mono-, di- and tri-chloracetyl groups on the rotatory power of methylic and ethylic glycerates and tartrates, by P. Frankland and T. S. Patterson. In order to ascertain the rotatory effect of the halogens when attached at a point in the molecule remote from the asymmetric carbon atom, the authors have examined the mono-, di- and tri-chloracetyl derivatives of the methylic and ethylic tartrates and glycerates; tables of the optical data are given.—The rotation of ethylic and methylic dimonochloracetyltartrates, by P. Frankland and A. Turnbull.

MANCHESTER.

Literary and Philosophical Society, January 25.—Mr. J. Cosmo Melvill, President, in the chair.—Mr. Louis Schwabe was elected an ordinary member of the Society.—The President referred to the loss sustained by the Society through the death of Mr. Thomas Ashton, who, since the death of Mr. James Heywood, was the "Father" of the Society, having been elected in 1837.—Mr. J. J. Ashworth called attention to a paper by Mr. J. Smith, in vol. xxi. of the Society's "Memoirs" (1859) on the origin of colours and the theory of light, in which is given a complete description of the colour phenomena seen when a black and white disc is rapidly rotated. As the phenomena have been to some extent re-discovered during the past few years, and have attracted considerable interest, he thought it advisable to direct attention to a paper which appeared to have been forgotten, in which the subject is treated with great thoroughness.—*Apropos* of an inquiry at a recent meeting of the Society, as to the origin of wheat, the President exhibited specimens of *Ægilops*, *Triticum*, and *Agropyrum* from his herbarium. Mention was made of a grass, *Ægilops ovata*, L., which was declared by a French botanist some fifty years ago to become wheat on being cultivated, and subsequent experiments appeared to confirm this statement. The opinion generally held by botanists now, however, is that in all probability wheat had its origin in *Triticum monococcum*, L., a plant found in Asia Minor, Mesopotamia and Greece.—Mr. Melvill afterwards communicated a paper by Mr. Peter Cameron entitled "Hymenoptera Orientalia, or Contributions to a Knowledge of the Hymenoptera of the Oriental Zoological Region," part vii.

February 8.—Mr. J. Cosmo Melvill, President, in the chair.—Mr. Brothers exhibited and described the latest form of Mr. F. E. Ives' photo-chromoscope, called the "Krōmskōp." Stereoscopic photographs were shown in which the various objects, when viewed through the arrangement of red, blue, and green glasses, were seen in all the colours of nature-groups of flowers, landscapes, &c., being thus realistically reproduced.—On the collision of two explosion-waves, by Messrs. R. H. Jones and J. Bower. This paper was a description of experiments carried out in the research laboratories of Owens College to examine whether there was any increase of pressure on the collision of two explosion-waves. This was shown to be the case, both by direct hydraulic tests of the tubing used and by photographs of the explosions. It was also argued that the increased luminosity at the point of collision and the increased speed of the reflected wave from the point of collision above that of reflection from a hard surface established the fact of greater pressure.

PARIS.

Academy of Sciences, February 7.—M. Wolf in the chair.—The President announced to the Academy the death of M. Jean Albert Gauthier-Villars.—Histological mechanism of cicatrisation; immediate synaptic reunion, by M. L. Ranvier. If two parallel incisions of equal length are made in the cornea of the rabbit, one going only a third to a half through the membrane, the other penetrating right through into the chamber behind, the latter heals more quickly than the simple wound. These effects are due to the part played by fibrin in cicatrisation.—On the development of real non-analytical functions, by M. P. Painlevé.—Transparency of bismuth in a magnetic field, by M. H. Buisson. The electromagnetic theory of light requires a relation between the transparency and electrical resistance of a body. By placing a thin sheet of bismuth in an intense field caused by an electromagnet, it is possible to cause sudden variations in the resistance of the plate. Since not the slightest variation in the intensity of the transmitted light could be detected under these conditions, the author concludes that the conductivity which intervenes in luminous phenomena is probably of a different order to that ordinarily measured.—Cycles of magnetic torsion and the residual torsion of soft iron, by M. G. Moreau.—On a method of comparing curves of torsion, by M. H. Bouasse.—Transformation of the X-rays by transmission, by M. G. Sagnac. A continuation of preceding work on the properties of the secondary rays, or rays emitted by bodies struck by the X-rays.—On photographic development, by M. R. Colson.—On the melting points of gold and silver, by M. Daniel Berthelot. The metals in the form of wire were heated in the furnace described in a previous paper, and the temperature of fusion measured by a platinum-iridium thermocouple, the latter being standardised in place by the interference method of air thermometry previously described. The temperatures found were 962° C. for silver and 1064° for gold.—Determination of the density of gases upon very small volumes, by M. Th. Schlœsing, jun. (see p. 374).—On the correlation between reduction by nascent hydrogen, electrolysis, and photolysis of carbonic acid, by M. A. Bach. The reduction of a solution of carbon dioxide in water by hydrogenised palladium gave rise to some formic aldehyde, the latter being identified by conversion into methylene-aniline and hexamethylenetetramine. The electrolytic reduction of carbon dioxide is shown to be parallel with the reduction by solar radiation.—On the aromatic urethanes of conicine, by MM. P. Cazeneuve and Moreau.—New colour reaction of phenylhydrazine, by M. Louis Simon. The solution of the hydrazine is warmed with a little aqueous trimethylamine, some drops of a solution of nitroprussiate of soda added, and then concentrated potash. A blue coloration results which allows of the detection of one part of phenylhydrazine in 50,000 of water.—On the influence of the frequency of the movements and of the weights sustained upon the maximum power of muscle under regular treatment, by MM. André Broca and Charles Richet.—On the development of the conjunctive fibrilla, by M. P. A. Zachariadès.—On the constitution of cannel coal, by M. B. Renault.—On the polymorphism of fluorspar, by M. F. Wallerant.

DIARY OF SOCIETIES.

THURSDAY, FEBRUARY 17.

ROYAL SOCIETY, at 4.30.—On the Connection between the Electrical Properties and the Chemical Composition of Different Kinds of Glass: Prof. A. Gray, F.R.S., and Prof. J. J. Dobbie.—On the Magnetic Deformation of Nickel: Dr. E. Taylor Jones.—Upon the Structure and Development of the Enamel of Elasmobranch Fishes: C. S. Tomes, F.R.S.—On Artificial Temporary Colour-Blindness, with an Examination of the Colour Sensations of 109 Persons: G. J. Burch.—Contributions to the Mathematical Theory of Evolution. On the Inheritance of the Cephalic Index: Cicely Fawcett, and Prof. K. Pearson, F.R.S.

ROYAL INSTITUTION, at 3.—Some Italian Pictures at the National Gallery: Dr. Jean Paul Richter.

SOCIETY OF ARTS (Imperial Institute), at 4.30.—The Plague in Bombay: Dr. Herbert Mills Birdwood.

LINNEAN SOCIETY, at 8.—On the Genus Arenaria: F. N. Williams.—On the Histology of the Salivary and other Glands of the *Colubridæ*: G. S. West.

CHEMICAL SOCIETY, at 8.—Some Lecture Experiments: J. Tudor Cundall.—Observations on the Influence of the Silent Discharge of Electricity on Atmospheric Air: W. A. Shenstone and W. T. Evans.

FRIDAY, FEBRUARY 18.

ROYAL INSTITUTION, at 9.—A Yorkshire Moor: Prof. L. C. Miall, F.R.S.

GEOLOGICAL SOCIETY, at 3.—Annual General Meeting.

EPIDEMIOLOGICAL SOCIETY, at 8.30.—The Relationship of Variations of the Ground-Water Level to the Incidence and Seasonal Distribution of Malarial Fevers in India: Surgeon-Captain Leonard Rogers.

SATURDAY, FEBRUARY 19.

ROYAL INSTITUTION, at 3.—The Structure of Instrumental Music: William H. Hadow.

MONDAY, FEBRUARY 21.

IMPERIAL INSTITUTE, at 8.30.—The Nile and its Tributaries: Colonel C. M. Watson, R.E., C.M.G.

SOCIETY OF ARTS, at 8.—The Principles of Design in Form: Hugh Stannus.

VICTORIA INSTITUTE, at 4.30.—Purpose in Nature: Dr. W. Kidd.

TUESDAY, FEBRUARY 22.

ROYAL INSTITUTION, at 3.—The Simplest Living Things: Prof. E. Ray Lankester, F.R.S.

ANTHROPOLOGICAL INSTITUTE, at 8.30.—Ethnographical Notes on the Murray Islands, Torres Straits: Rev. Archibald E. Hunt.—There will be exhibited two Tattooed Heads carved in Kauri Gum from New Zealand, lent by Edge Partington; and a Collection of Objects obtained during the Recent Exploration of a Cairn in Breconshire, lent by T. C. Cantrill.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Theory, Design, and Practical Working of Alternate-Current Motors: Llewelyn B. Atkinson.—Dublin Electric Tramways: H. F. Parshall.

WEDNESDAY, FEBRUARY 23.

SOCIETY OF ARTS, at 8.—Children's Sight: R. Brudenell Carter.

THURSDAY, FEBRUARY 24.

ROYAL SOCIETY, at 4.30.—Meeting for Discussion.—Subject: The Scientific Advantages of an Antarctic Expedition. The Discussion will be opened by Dr. John Murray, F.R.S.

INSTITUTION OF ELECTRICAL ENGINEERS, at 8.—On the Manufacture of Lamps and other Apparatus for 200 volts Circuits: G. Binswanger Byng.

FRIDAY, FEBRUARY 25.

ROYAL INSTITUTION, at 9.—The Theory of Colour Vision applied to Modern Colour Photography: Captain W. de W. Abney, C.B., F.R.S.

INSTITUTION OF CIVIL ENGINEERS, at 8.—The Problem of Train Resistance: C. E. Wolff.

SATURDAY, FEBRUARY 26.

ROYAL INSTITUTION, at 3.—The Structure of Instrumental Music: W. H. Hadow.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

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